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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,086	06/25/2003	Yoshiyuki Kaku	9475/0M771US0	5380
7278	7590	07/07/2005	EXAMINER	
DARBY & DARBY P.C. P. O. BOX 5257 NEW YORK, NY 10150-5257			VAN, LUAN V	
			ART UNIT	PAPER NUMBER
			1753	
DATE MAILED: 07/07/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/607,086

Applicant(s)

KAKU ET AL.

Examiner

Luan V. Van

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/29/03</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). Receipt is acknowledged of papers submitted, which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 3 are rejected under 35 U.S.C. 102(a) as being anticipated by Kubota et al.

Regarding claim 1, Kubota et al. teach a method for manufacturing a ferrule comprising the steps of: immersing a negative electrode line (figure 10, wire 38) and a positive electrode (figure 10, anode 33) in an electroforming fluid in an electroforming bath; disposing at least one dummy line (figures 6-9, any of the wires can be a dummy

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line) in the vicinity of the negative electrode line; depositing metal on the negative electrode line by electroforming to form a cylindrical electroformed element (paragraph 35) in such a manner that the negative electrode line and the dummy line are integrally embedded in the electroformed element; and taking out at least the dummy line (paragraph 42) from the electroformed element to form a through hole for inserting an optic fiber, to obtain the ferrule made of the electroformed element.

Regarding claim 3, Kubota et al. teach the core wire can be made of nylon, polyester, or Teflon (paragraph 37) which are insulating materials.

Claims 1-3 and 9-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Tanaka et al.

Regarding claim 1, Tanaka et al. teach a method for manufacturing a ferrule comprising the steps of: immersing a negative electrode line (figure 4, wire 9) and a positive electrode (figure 2, anode 4) in an electroforming fluid in an electroforming bath; disposing at least one dummy line (figure 4, any of wire 9 can be a dummy line) in the vicinity of the negative electrode line; depositing metal on the negative electrode line by electroforming to form a cylindrical electroformed element (column 8 lines 45-62) in such a manner that the negative electrode line and the dummy line are integrally embedded in the electroformed element; and taking out at least the dummy line (column

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10 lines 29-53) from the electroformed element to form a through hole for inserting an optic fiber, to obtain the ferrule made of the electroformed element.

Regarding claims 2 and 10, Tanaka et al. teach the method of subjecting the wire member to a mold release treatment and "covering parts of the wire with the electrically insulating member...such as vinyl tape" (column 10 lines 52-56).

Regarding claims 3 and 11, Tanaka et al. teach the wire can be made of nylon, polyester, or Teflon (column 9 lines 52-56) which are insulating materials.

Regarding claim 9, Tanaka et al. teach the method for manufacturing a ferrule comprising the steps of: immersing a negative electrode line (figure 4, wire 9) and a positive electrode (figure 2, anode 4) in an electroforming fluid in an electroforming bath; disposing at least one dummy line (figures 5B-G and 19, any of the core wires can be a dummy line) in the vicinity of the negative electrode line and disposing at least one positioning line (figures 5B-G and 19, any of the core wires can be a positioning line) in the vicinity of the dummy line; depositing metal on the negative electrode line by electroforming to form a cylindrical electroformed element in such a manner that the negative electrode line, the dummy line, and the positioning line are integrally embedded in the electroformed element (figures 5B-G and 19); taking out at least the dummy line, out of the negative electrode line and the dummy line (column 10 lines 29-53), from the electroformed element to form a through hole for inserting an optical fiber;

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and taking out the positioning line (column 10 lines 29-53) from the electroformed element to form a positioning hole used for adjusting a position of the electroformed element (figures 6, 15B, 17 and 20) when an outside shape thereof is machined (column 11 lines 31-47), thereby to obtain the ferrule made of the electroformed element.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al.

Regarding claim 4, Tanaka et al. teach the method for manufacturing a ferrule comprising the steps of: immersing a negative electrode line (figure 4, wire 9) and a positive electrode (figure 2, anode 4) in an electroforming fluid in an electroforming bath; disposing at least one dummy line (figures 5B-G and 19, any of core wires can be a dummy line) in the vicinity of the negative electrode line and disposing at least one positioning line (figures 5B-G and 19, any of core wires can be a positioning line) in the vicinity of the dummy line; depositing metal on the negative electrode line by electroforming to form a cylindrical electroformed element in such a manner that the negative electrode line, the dummy line, and the positioning line are integrally embedded in the electroformed element (figures 5B-G and 19); taking out at least the dummy line, out of the negative electrode line and the dummy line (column 10 lines 29-53), from the electroformed element to form a through hole for inserting an optical fiber.

The difference between the reference and the instant claim is that the reference does not explicitly teach forming a positioning hole used when the ferrule is fitted into another ferrule.

Tanaka et al. teach a ferrule fitted with a coated portion (column 18 lines 17-30; figure 20, coated portion 400) around an optical fiber. The coated portion can be an electroformed element which constitutes another ferrule. Tanaka et al. further teach that this connector can be constructed by using multiple-core type ferrule (column 18 lines 59-62).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the multiple-core type ferrule of Tanaka et al. by using at least one of the holes for positioning when the ferrule is fitted into another ferrule because using at least one of the holes for positioning obviates the use of an external holder (column 18 lines 19-21).

Regarding claims 5 and 6, Tanaka et al. teach the ferrule is used as a socket (figures 15B and 20, ferrules 110 and 150, respectively); and an optical fiber fixedly attached to the positioning hole of a second ferrule is inserted into the positioning hole of the ferrule. The difference between the reference and the instant claim is that the reference does not explicitly teach attaching a plug pin. However, the optical fiber 40a in figure 20 is functionally equivalent to a plug pin. Tanaka et al. further teach that the optical fiber connector, which can be integrally made as part of the ferrule (column 18 lines 29-30), may function as a plug or a jack, comprising of a sleeve for aligning two ferrules (column 5 lines 17-24).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the multiple-core type ferrule of Tanaka et al. by replacing an optical fiber with a plug pin, because Tanaka et al. teach that the ferrule may be used as a plug, and because it is within the ability of one having ordinary skill in the art.

Regarding claim 7, Tanaka et al. teach the method of subjecting the wire member to a mold release treatment and "covering parts of the wire with the electrically insulating member...such as vinyl tape" (column 10 lines 52-56). The mold release treatment can also be an installation treatment.

Regarding claim 8, Tanaka et al. teach the wire can be made of nylon, polyester, or Teflon (column 9 lines 52-56) which are insulating materials.

Claims 4-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota et al.

Regarding claim 4, Kubota et al. teach the method for manufacturing a ferrule comprising the steps of: immersing a negative electrode line (figure 10, wire 38) and a positive electrode (figure 10, anode 33) in an electroforming fluid in an electroforming bath; disposing at least one dummy line (figures 6-9, any of the wires can be a dummy line) in the vicinity of the negative electrode line and disposing at least one positioning line (figure 8-9, line 25 and 29 respectively) in the vicinity of the dummy line; depositing metal on the negative electrode line by electroforming to form a cylindrical electroformed element in such a manner that the negative electrode line, the dummy line, and the positioning line are integrally embedded in the electroformed element (paragraph 35); taking out at least the dummy line, out of the negative electrode line and the dummy line (paragraph 42), from the electroformed element to form a through

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hole for inserting an optical fiber. Kubota et al. further teach forming a positioning hole or pinhole (paragraph 43) for aligning the ferrules.

Although Kubota et al. teach that the ferrule is built into an optical connector (paragraphs 23-24), comprising of an optical fiber receptacle and an optical fiber plug (paragraph 56, figure 14) which are fitted into each other, the reference does not explicitly teach that the ferrule is fitted into another ferrule.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the ferrule of Kubota et al. by integrating the optical fiber connector and the ferrule and fitting the integral ferrule into another, because it would obviate the use of an external holder or connector, and because it would reduce the number of parts for the connection.

Regarding claims 5 and 6, Kubota et al. teach the ferrule is used as a socket (figure 14, pin insertion holes 66a and 66b); and a wire rod fixedly attached to the positioning hole of a second ferrule is inserted into the positioning hole of the ferrule (paragraph 43). Although Kubota et al. disclose that the wire rod can be left in the body to form a pin on one ferrule, the wire rod must be removed on another ferrule in order to form a pinhole to receive the pin.

Regarding claim 8, Kubota et al. teach the core wire can be made of nylon, polyester, or Teflon (paragraph 37) which are insulating materials.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. in view of Mukouda (if it is assumed that no current is applied to the dummy line and the positioning line.)

Tanaka et al. teach the method as described above in addressing claims 1-11. The difference between the reference to Tanaka et al. and the instant claims is that the reference does not explicitly teach applying current only to the negative electrode line.

Mukouda teaches a method of manufacturing a metal multi-ferrule for a multi-core optical fiber in which "the current should be applied first to one core wire that is positioned in the center of plural core wires, so as to form an electrocoating on the core wire in the center, and then the current is applied sequentially to the adjacent core wires to form an electrocoating thereon, so that dense electrocoating can be integrally formed with few pores therein" (paragraph 109, figure 8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Tanaka et al. by applying current only to the negative electrode line at first as taught by Mukouda, because it would eliminate the formation of pores within the electroformed element. Furthermore, it is within the ability

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of one having ordinary skill in the art to choose not to apply a current to the adjacent core wires (or dummy and positioning lines).

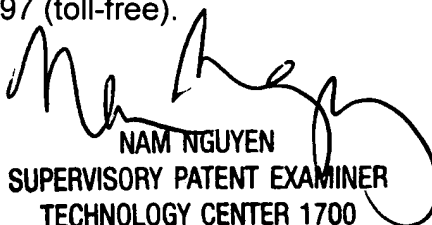
Conclusion

The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure. Oda et al. teach using insulated fine wires for electroforming. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan V. Van whose telephone number is 571-272-8521. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LVV
6/30/05


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